

CLAIMS

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It's related to two inventions which can be applicable as separated independent inventions, but in technical and chemical way they can be mutually connected.

1. The procedure of obtaining of invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion* for all internal combustion engines and for all systems of cooling and heating, has been done on nontoxic base.

If it is applied as an independent invention from invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze*, the first procedure with given chemical formulas in table A is applied.

This invention – fluid cooler can be used as a concentrated liquid – fluid for heat exchange till 96% and also can be used as a liquid made without any dilution. In a first case, the temperature is from minus 38°C and till plus 115°C, in second case of usage, the temperature is from minus 70°C till plus 160°C.

All worldwide known producers of antifreeze, everywhere in the world, as well as in Serbia&Montenegro, produce an antifreeze from mono-ethylene glycol, ethylene glycol, and propylene glycol. The known fact are that antifreezes of that kind content a synthetic compounds – xenobiotics, as well as the facts that those antifreezes are toxic and very harmful to the health of human, animals and plants.

The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion is characterized by the fact that it's nontoxic, because the dominant compound is glycerin, which is the natural product. Furthermore, it is characterized by the fact that it contains a nontoxic additives, which are totally new anticorrosive protection in regard to all present known antifreezes which are produced all around the world, what is indicated in table A of the formulation. In the presently known antifreezes there are three-four dominant additives, such as: sodium-nitrate, sodium-nitrite, sodium-benzoate, which are not enough to have an efficient anticorrosive protection. By adding the additives from this formulation as in the description, which are specially characterized by technical quality, the poly-carbon-xylate is completely adjusted, so all the metals are protected.

In this coolant – fluid the new chemical substance has been applicable, which are nontoxic or if they are toxic, they don't exceed the allowed level for an additives used in food industry.

The new substances and additives are: multi atomicity alcohol – glycerol, poly-carbon-xilates, three-ethanol-amine, benzo-three-azole, potassium-sulfide, sodium-hydroxide and other additives from table A in the invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion*.

2. The invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze* is independent from the first procedure, which has independent usage, and it's specially adjusted for its production and application. In the production procedures of these formulations, the chemical formulas and substances are given in the second procedure and table B. This procedure is *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze* and the Inhibitor for the production of fluid from the invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion*.

These inventions are designed with the additives, which are the new one for the effective protection from corrosion, given in table B.

The application of this invention is not known in technical field, because it's applicable in a small quantities in utilized coolant – antifreeze, what is explained in invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze*, it can be applicable immediately. This invention is new because it consists of several additives and it's effective as a modifier and regenerator for utilized antifreeze.

This inhibitor, prepared by this formulation, can be applicable for the production of invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion*, it will improve the production process, and by this formulations the product will be obtained with more effective anticorrosive protection and is applicable immediately.

The both inventions are in similar category although they are independent, because they are bonded by inventor's conception, there is a technical-chemical and basic connection between them. The invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze* is specially applicable in invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion*, so it makes the dependence in that procedure, but the procedures and the formulations should be separately adjusted to each other.

The invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze* is applied as a regenerator and as an inhibitor for the production of the invention *The Formulation of Nontoxic Liquid Watery Solution Against Freezing and Corrosion*.

The invention *The Formulation of Watery Solution of Inhibitor Against Corrosion for Utilized Antifreeze*, is characterized by the fact that its efficiency is that it extends a life-time to utilized antifreeze at least for two years, and it stops the corrosion in engine 100%, like the antifreeze is the new one.

The second formulation is also characterized by the fact that it effectively stops the corrosion, which has been started because of the antifreeze utilization and poor anticorrosive protection, it completely protects an engine from corrosion, reduces the freezing point, it's applied in small quantity, a frequently changes of antifreeze is reduced. With this formulation the life-time of the antifreeze is extended, it regenerates the antifreeze and performs as a modifier.

This products are not known in the world.